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NON-VERBAL COMMUNICATION SKILLS OF CHILDREN WITH AUTISM  
SPECTRUM DISORDER

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A Thesis  
Presented to the  
Faculty of  
California State University,  
San Bernardino

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In Partial Fulfillment  
of the Requirements for the Degree  
Master of Arts  
in  
Education:  
Special Education

---

by  
Shamma Ali T. AlOkla  
June 2018

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Approved by:

Dr. Jemma Kim, First Reader

Dr. Kathleen Phillips, Second Reader

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## ABSTRACT

The purpose of this study was to investigate how special education teachers implement evidence-based practices for non-verbal communication skills of children with autism spectrum disorder (ASD). This study interviewed six early childhood special education teachers from preschools in the Southern California. According to the teacher interviews, joint attention deficits in children with ASD were overcome using visual aids, toys, and basic sign gestures. Peer tutoring, functional communication training and drawing were found to improve nonverbal communication skills. In addition, children with ASD regularly played with their typically developing peers. In conclusion, a co-teaching model can benefit children with ASD and also reduce the stigma typically developing children may have of their peers in special education classes. However, a larger sample size is needed so that findings from this research can be generalized to a larger population of special education teachers and children with ASD.

## ACKNOWLEDGEMENTS

I would like to thank my country, Saudi Arabia, for putting their faith in me and for continuously supporting my education. Also, I would like to thank my family for their unconditional and endless support. Moreover, I would like to take this opportunity to express my gratitude to my first reader, Dr. Jemma Kim, and second reader, Dr. Kathleen Phillips. This project would not be accomplished without your support, encouragement, and guidance.

## DEDICATION

After 4 years of hard struggling nights and going through a dramatic event that impacted my life it all came down to one day where I was able to say I DID IT! I kept going and never gave up for someone that believed in me and helped me since the beginning. My son, you started this journey with me but I ended it alone and I hope I made you proud. My son and my angle, may your beautiful soul rest in peace. Turki AlMadi 2/4/1994 – 11/26/2015

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## CHAPTER ONE

### INTRODUCTION

Communication is the process of transmitting information from one person to another to develop shared understanding (Velentzas & Broni, 2014).

Communication can be deliberate or accidental, involving typical or irregular signs and also spoken or other forms so that meaningful exchange of information takes place. Dixon and O'Hara (2006) point out that encoding of messages occurs in more than words: Non-verbal language including posture, facial expression, inflection, and tone, have a big role to play in decoding meaning in a message. Such non-verbal language may also cause unintended meaning, especially if it occurs through non-verbal leakage. Non-verbal language is particularly important when conveying a message.

Individuals who receive a message must determine the intent of the sender, the context of the message, and then successfully translate the information before resolving the next steps to take (Velentzas & Broni, 2014). These skills are prerequisites for learning and for developing social bonds.

The communication skills including non-verbal and verbal language skills are critical in learning and developing social bonds. However, children with autism spectrum disorder (ASD) have limited communication skills: Most of them having difficulty with communication and language, as well as social interactions (Cadette, 2015). In addition, there is a relationship between non-verbal

communication skills in children with ASD and language development at later developmental stages (Ingersoll & Gergans, 2006). In fact, deficits in imitation skills, for example, are partly responsible for children with ASD having difficulty with acquisition of language through normal means. When children with ASD are trained non-verbal communication skills at an early age, they become better able to express their emotions and feelings in more than one way such as through body gestures and pointing (Alshurman & Alsreaa, 2015).

### Statement of the Problem

Non-verbal communication disorders are prevalent in children with autism spectrum disorder (ASD), as evidenced by their weakness in understanding non-verbal communication such as eye communication, hand signs, body language, facial expressions, and cues (Alshurman & Alsreaa, 2015). In addition, language acquisition among children with ASD, unlike in other typically developing children occurs in an atypical manner, making it difficult for teachers to implement evidence based practices to improve the non-verbal communication skills of children with ASD (Cadette, 2015).

However, the extent to which teachers implement evidence based practices to improve the nonverbal communication skills of children with ASD, is not known. Children enjoy being kissed and hugged, implying that non-verbal communication and forming with adults is important for children. Negative non-verbal communication such as a frown, for example, usually sends the message that something is wrong and children pick up on this gesture immediately. That

means that non-verbal communication skills are important, and can prove to be critical for children with ASD if they are to develop functional communication skills.

### Purpose of the Study

The purpose of this study was to explore how special education teachers implement evidence-based practices to promote non-verbal communication skills in children with ASD. This study first reviewed effective methods of teaching non-verbal communication skills for children with ASD, bearing in mind that many of these children may have different manifestations of the disability and that schools have different resources for coping with children of special needs. Second, this study also explored how special education teachers are advocating for children with ASD when working with general education teachers.

### Research Questions

The following were the research questions:

1. What are the evidence-based practices to improve non-verbal communication skills of children with ASD?

What kinds of challenges do teachers face when teaching non-verbal communication skills to children with ASD?

## CHAPTER TWO

### LITERATURE REVIEW

In this chapter, several studies are reviewed in order to gather various perspectives and research findings on nonverbal communication skills in children with ASD as well as how such deficits have been overcome with training. Second, a number of practices are explored, including joint attention training, peer teaching, and drawing.

#### Nonverbal Communication in Autism Spectrum Disorder

Typically developing children have the ability to concurrently learn multiple communication skills. Such skills include joint attention and social interaction. However, children with ASD do not have this ability, and are known to develop such skills sequentially. They often make their intentions known with motions of their hands and body to compensate for their inadequacies in other forms of communication such as eye contact and gestures (Shumway & Wetherby, 2009).

Joint attention skills should be promoted in children with ASD if they are to reach their full potential in relation to social interaction skills (Boyle, Arnedillo-Sanchez & Zahid, 2015). Limited intentionality is a critical deficit in children with ASD (Noens & Van-Berckelaer-Onnes, 2005). Maljaars et al. (2011) found that children with ASD exhibited lower levels of intentional communication compared to their typically developing counterparts. The types of communications that were examined included gestures and eye gaze. Similarly, Chiang, Song, Lin

and Rogers (2008) found deficits in joint attention skills in children with ASD compared to their typically developing peers.

Konst et al. (2014) examined non-verbal communication skills in infants and toddlers with both comorbid ASD and cerebral palsy, and infants and toddlers with Down syndrome or cerebral palsy alone. The study found that children with both cerebral palsy and ASD had more deficits in non-verbal communication skills than those with either cerebral palsy or Down syndrome alone.

In their longitudinal study with twelve 3-6 year old preschool children with ASD, Vitaskova and Rihova (2013) investigated deficits in relation to difficulties with making nonverbal expressions such as imitations, postures, gestures, facial expressions, and eye contact. They found that only two children had adequate ability to make eye contact, another five children had limited ability, while the other five had no ability to make eye contact. Similarly, the children had difficulty in making facial expressions and expression of gestures. Only two children had adequate ability to make facial expressions, while the rest either had limited ability or no ability at all. With regard to expression of gestures, only one child had adequate ability; the majority of the remainder had no ability at all.

These results are not surprising because parents of children with ASD are often able to detect what may be regarded as ASD specific symptoms as early as the first year. These symptoms include inability to make facial expressions, and retention or initiation of eye contact in their children. In essence, the area of

nonverbal communication in children with ASD is an important research subject especially in the area of special education (Vitaskova & Rihova, 2013).

## Development of Non-Verbal Communication Skills

### Joint Attention Training in Autism Spectrum Disorder

Joint attention is defined as a behavior which coordinates interactive behavior between two people in relation to events or objects, or the sharing of such events or objects. For example, this behavior can be related to how an individual associates the shifting of another person's gaze to an object, thereby making a connection that shifting of the gaze to the object is intended to convey meaning. In typically developing children, the development of non-verbal joint attention is evident at 9-12 months of age, but this same behavior is severely lacking in children with ASD (Bakeman & Adamson, 1984).

Klein et al. (2009) used mechanical toys as a prompt for children with ASD to follow an adult's gaze. After a number of training sessions with three 4-year-old children with ASD, the mechanical prompt was deliberately delayed in a progressive manner and eventually done away with altogether after the children had successfully learned gaze following and even located objects with the gaze alone. Success in delayed cue training meant that the stimulus to shift the gaze was switched from the cue of the mechanical toy to the cue from the adult's shifting gaze.

Paparella, Goods, Freeman and Kasari (2011) similarly argued that children with ASD have deficiencies in joint attention skills, which are nonverbal



skills that children deploy to share experiences: gestures such as showing, coordinated looks between people and objects, and pointing. There are also nonverbal gestures for requesting instead of sharing, such as pointing, offering, and reaching to solicit help. Nevertheless, such deficiencies are not uniform in this constituency of children. There are research studies that have found similarities between children with ASD and their typically developing peers in relation to how they make requests (Loveland & Landry, 1986; Charman et al., 1997), but other studies show deficits in among children with ASD compared to their typically developing peers (Sigman, Mundy, Ungerer & Sherman, 1986; McEvoy, Rogers & Pennington, 1993).

The divergence of opinion noted above thus formed the reason for a study to investigate when nonverbal joint attention skills emerge in children with ASD (12-60 months of age) and in typically developing children of the same age (Paparella et al., 2011). Interestingly, requesting skills in both children with ASD and typically developing children emerged at the same time, but the sequence with which joint attention skills emerged in children with ASD deviated from the normative model, especially response skills in showing and following gaze. These results resemble those of Maljaars et al. (2011) who found lower levels of intentional communication in children with ASD compared to their typically developing counterparts.

Chiang et al. (2008) examined non-verbal communication skills in children with ASD. There were 23 children with ASD and a chronological age (CA) of

32.79 months and another 22 typically developing children with a mental age (MA) of 18-20 months. There was also a group of 23 children whose mental and chronological age was matched; all of them had developmental delay. Another group of participants were 22 typically developing 13-15 month old toddlers and infants. Non-verbal communication skills including social interaction, requesting, and joint attention were assessed for developmental timelines.

Joint attention deficits were seen in 2-3 year old children with ASD when compared with the typically developing infants and toddlers. The non-verbal communication profile of the children with ASD was different from children in the other groups. The children with ASD showed deviant patterns in how they used non-verbal communication. The variation could not be attributed to their mental ages. Joint attention deficits in children with ASD were higher when compared to the delayed comparison group as well as the typically developing infants and toddlers. In addition, a dyadic interaction such as turn taking skill was found to be impaired among the children with ASD (Chiang et al., 2008).

### Peer Tutoring

According to Alshurman and Alsreaa (2015), peer tutoring can be an effective tool to use for children with ASD. The purpose of their study was to determine if non-verbal communication skills could be developed through peer teaching in a sample of ten 8-10 year old children with ASD. In the study, five children were placed in a control group and five in an experimental group. In the experimental group, normal peers were taken through a peer tutoring program

and placed together with children with ASD. The results in the experimental group showed better development in non-verbal communication skills compared to the control group. The better communication skills were attributed to peer-teaching. The non-verbal communication skills included imitation, visual communication, shared attention, and understanding facial expressions; all learned through body gestures of peer tutors. At two months follow-up, the differences in the mean scores within the experimental group were not statistically significant, indicating that effects of peer tutoring had been sustained after the experiment.

McFadden, Kamps and Heitzman-Powell (2014) investigated if peer-mediation, among other social skills teaching procedures such as prompting and direct instruction, could improve social behaviors during class recess in four children with ASD. Elements of Peer Networks that are recommended in research were used and included typically developing peers chosen by a teacher and a child with ASD. In the peer network, there was both peer mediation and adult instruction in an integrated setting. The study found improvement in social communication between the children with ASD and their peers. In the case of one child with ASD specifically, nonverbal communication improved significantly. In a theater-based peer-mediated intervention, thirty children with ASD were found to improve their memory of faces and group activity with toys while in the company of peers (Corbett et al., 2016). The purpose of the peer training program was to train peer actors and then pair them with a child with ASD.

Peers were first given presentations about autism spectrum disorders, behavioral strategies such as redirection and positive reinforcement, and modeling techniques including video and live modeling. In addition, peers were taught SENSE (Social Emotional NeuroScience Endocrinology) theater principles that included using nonverbal communication and gestures in directed ways, the practice of theatrical games, as well as creating a fun environment. Children with ASD may have challenges using body language for communication (Attwood, Frith, & Hermelin, 1988; Reed et al., 2007), but since the whole body in tandem with verbal and nonverbal communication was used during acting, children with ASD were able to pick up on nonverbal cues.

### Drawing

In a number of observations and interviews with teachers, children were found to use drawing to facilitate non-verbal communication for children with ASD (Anim, 2012). In one classroom observation, for example, a child with ASD was able to express a word and even sentences through drawings. Using drawing as a tool for communication in class is not surprising given that many activities in preschool are drawing oriented.

Communication is only effective if it is conveyed unambiguously and clearly, and if the receiver understands what is transmitted by others (Zepetella, 2012). Effective communication can also be said to be successful when the person sending a message and the person receiving the message understand the same message. The most revealing point about communication is that words

form only 45 percent of communication, but body language represents 55 percent of the overall message. The importance of nonverbal communication should not be underestimated.

Research on non-verbal communication skills has suggested that joint-attention trainings for young children with ASD (Klein et al., 2009; Paparella et al., 2011; Chiang et al., 2008) and peer-mediated interventions for school aged children with ASD (Alshurman & Alsreaa, 2015; McFadden et al., 2014; Corbett et al., 2016) may be effective to improve non-verbal communication skills in children with ASD. However, there is limited information regarding how classroom teachers try to implement such effective interventions to promote non-verbal communication skills for their students with ASD in their classrooms. Thus, this study interviewed special education teachers to explore how they implemented evidence-based practices to promote non-verbal communication skills for children with ASD and the kinds of challenges the special education teachers faced when teaching non-verbal communication skills to their students with ASD in the classrooms.

## CHAPTER THREE

### METHODOLOGY

This chapter describes the methodology of the study, including the research design, setting, context, and data collection and analysis procedures. In addition, issues of privacy and confidentiality are also examined.

A qualitative approach was used to collect data through interviews. An interview is described as a method of asking someone questions for the purpose of data collection to analyze a certain aspect within a group (Mathiyazhagan & Nandan, 2010). Such data may be obtained through direct solicitation, including face-to-face interviews. Response rates in face-to-face interviews are higher when compared to survey methods such as paper questionnaires and telephone interviewing (Krosnick, Presser, Fealing & Ruggles, 2015). This study therefore elected to use face-to-face interviews because such a technique allows a deeper understanding of the issues, and misinterpretation of questions posed to a participant can be corrected.

#### Interviews Setting/Context

This study was conducted in an American school in Southern California. This particular school was selected because it has a special education program, allowing the researcher to solicit for participation from a generous pool of special education teachers. The interviews were held with six special education teachers from the preschool.

## Procedures

An advertising poster was placed in the school, describing the study and asking for willing participants among special education teachers to get in touch through either e-mail or cell-phone. Purposive sampling was then used from the responses. Purposive sampling methods ensure only specific categories of participants are included from a sample population (Robinson, 2014). Among the first responders were 20 special education teachers. Six confirmed their appearances for interviews and a convenient time was agreed upon with all of them.

The interviews were preceded with a signed informed consent form from each participant in the study, ensuring to let each know that participation was voluntary and could be withdrawn at any time. In addition, each of the participants was informed that the study would be available upon their request. Three participants were interviewed in their classrooms and the other three over the telephone. Each interview took approximately 45 minutes.

A digital audio recorder was used to capture the interview sessions and observations and responses were recorded in a field log during the interviews. Important notes were also jotted down during the course of interviews. This helped to develop follow-up questions as a method of seeking clarification or depth of a matter under discussion. The audio recordings were then loaded into a computer, and Express Scribe transcription software used to convert the data into readable form.

All six special education teachers were preschool special education teachers. Five out of the six participants were female. All the participants were between the ages 28-38. Only one participant had 10 years of experience. The rest had between 4-6 years of experience. The demographic information is shown in Table 1.

Table 1. Demographic Information of Six Special Education Teachers

Participant	Age	Gender	Years of Experience
Teacher1	29	Female	10
Teacher2	30	Male	6
Teacher3	38	Female	5
Teacher4	32	Female	4
Teacher5	36	Female	5
Teacher6	35	Female	6

#### Interview Questions

1. Are you certified as a special education teacher?
2. What strategies do you use to overcome disruptive behaviors among children with ASD?
3. What nonverbal communication skills do you teach children with ASD?



4. Do you have rules or procedures in place in order to keep your classroom in order?
5. How do you advocate for children with ASD when working with general education teacher?
6. What nonverbal behavior methods do you employ for your students?
7. What strategies do you use to motivate children with ASD?
8. What Major challenges have you faced teaching children with ASD?

### Data Analysis

Preparation of data for analysis requires a researcher to listen to interviews and verbal descriptions and then transcribe them (Wertz, 2005). This study therefore replayed the interviews and verbal descriptions and then transcribed them. The study then used a general inductive approach for analyzing the transcribed qualitative data. The purpose of a general inductive approach is to summarize raw textual data and make links between research objectives and the summarized data (Thomas, 2006). The method of analysis is to develop categories from the raw textual data into a framework within which key themes are identified. In the current study, therefore, I read the transcripts several times so that I could identify key themes.

### Validity and Reliability

To ensure validity, the researcher took into account all viewpoints of participants. According to Noble and Smith (2015), truth value in qualitative research is described as recognition of multiple realities. Truth value in

qualitative research is synonymous with validity in quantitative research; the latter describing the extent to which findings are a true reflection of the data. To ensure reliability, this study used only the inductive approach for data analysis, and accounted for personal as well as research method biases in research. Personal biases were overcome by keeping researcher viewpoint out of the study, and research method bias was minimized by asking all participants the same questions. As Noble and Smith (2015) observe, reliability in qualitative research refers to 'consistency', or how trustworthy methods used in the study have been, and that decisions made by the researcher are transparent and clear. The validity and reliability of preliminary analysis data were reviewed by the first reader of this paper.

## CHAPTER FOUR

### RESULTS

There were five major questions asked in the interviews. The first major question was: "Are you certified as a special education teacher?" The aim of the first question was to determine whether participants were qualified to teach children with ASD. The second major question asked in the interviews was: "What strategies do you use to intervene with challenging behaviors in children with ASD?" The aim of the second major question was to determine whether special education teachers used different methods to address disruptive behaviors. The third major question to ask in the interviews was: "What nonverbal communication skills do you use to teach children with ASD?" The aim of the third major question was to assess what nonverbal communication skills were preferred by special education teachers.

The fourth major question to ask in the interviews was: "How do you advocate for children with ASD when working with general education teacher?" The fourth major question was critical because children in special education classes often mix with children from general education classes, especially during play. The fifth major question to ask in the interviews was: "What were the major challenges faced when teaching children with ASD?" After an analysis of the interview transcripts, a number of themes emerged.

#### Theme #1

All the participants were certified special education teachers.

## Theme #2

Functional communication training was used to intervene with disruptive behaviors and to teach nonverbal communication skills. The results are summarized in Table 2.

Table 2. Functional Communication Training

Participant	Reason for using Functional Communication
Teacher4	Intervene with disruptive behaviors
Teacher5	Intervene with disruptive behaviors
Teacher6	Intervene with disruptive behaviors
Teacher3	Teaching nonverbal communication skills
Teacher5	Teaching nonverbal communication skills

The results from the interviews indicate that teachers 4, 5 and 6 used functional communication training (FCT) to intervene with disruptive behaviors, while teachers 3 and 5 used FCT to teach nonverbal communication skills. An analysis of these findings indicates that one teacher (teacher5) used FCT to intervene with disruptive behaviors and to teach nonverbal communication skills.

## Theme #3

Visual aids were used to intervene with disruptive behaviors and to teach nonverbal communication skills. The results are summarized in Table 3. The

results in Table 3 indicate that visual aids were used by teachers 1 and 4 to intervene with disruptive behaviors while teacher6 used visual aids to teach nonverbal communication skills.

Table 3. Use of Visual Aids

Participant	Reason for using Visual Aids
Teacher1	Intervene with disruptive behaviors
Teacher4	Intervene with disruptive behaviors
Teacher6	Teaching nonverbal communication skills

#### Theme #4

Reinforcers were used to intervene with disruptive behaviors. The results are summarized in Table 4.

Table 4. Using Reinforcers

Participant	Reason for using Reinforcers such as Toys
Teacher1	Intervene with disruptive behaviors using toys
Teacher4	Intervene with disruptive behaviors using toys
Teacher2	Intervene with disruptive behaviors using edibles and playful items that could light or wind up

The results in Table4 indicate that reinforcers were used by teachers 1, 2 and 4 to intervene with disruptive behaviors. However, teacher1 and 4 used toys and teacher2 preferred using playful items that could light or wind up and giving edibles such as Cheerios and Gerber puffs.

#### Theme #5

There were other strategies used for teaching nonverbal communication skills. The results are summarized in Table 5.

Table 5. Additional Strategies for Teaching Nonverbal Communication Skills

Participant	Strategy1	Strategy2	Strategy3
Teacher1	PECS training	Basic sign gestures	Use of a device
Teacher2			Use of a device
Teacher3			Use of an iPad
Teacher4	PECS training		SGD + Gotalk4

The results in Table 5 indicate that other strategies were used for teaching nonverbal communication skills. Teacher1 and teacher4 used PECS training. In addition, teacher1 used basic sign gestures. Teachers 1, 2 and 4 used a device to teach nonverbal communication skills. Teacher3 and 4 were specific; teacher 3 mentioned using an iPad and teachers4 used SGD + Gotalk4.

## Theme #6

The special education teachers used various methods to advocate for children with ASD. While most methods were unique, some were similar and only differed in how teachers explained their approach. The results are summarized in Table 6.

Table 6. Advocating for Children with Autism Spectrum Disorder

Participant	Advocating for children with ASD when working with general education teacher
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Teacher1	<ul style="list-style-type: none"><li>a) Incorporating suggestions together with special education teacher</li><li>b) Taking visual aids to general education classrooms</li></ul>
Teacher2	The special education teacher and general education teacher were in agreement that a schedule and strict routine worked well for both of them
Teacher3	<ul style="list-style-type: none"><li>a) Children with ASD and general education students often played together under the supervision of both the special education teacher and general education teacher.</li><li>b) Social play groups for children with ASD and general education students</li><li>c) There is a co-teaching model where a special education teacher and a general education teacher work together</li></ul>
Teacher4	<ul style="list-style-type: none"><li>a) Many opportunities to make decisions together with general education teacher</li><li>b) Children with ASD and general education students play together</li></ul>
Teacher5	<ul style="list-style-type: none"><li>a) General education teacher was cooperative</li><li>b) Children with ASD and general education students played together</li><li>c) General education teacher helped in the special education classroom</li></ul>
Teacher6	<ul style="list-style-type: none"><li>a) The special education teacher agreed with general education teacher that children could learn from each other</li><li>b) Children with ASD and general education students play together</li></ul>

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Teacher1 reported that she and the general education teacher incorporated suggestions from each other in their classrooms when needed. For example, Teacher1 sometimes took visual aids to the general education classrooms when needed. Teacher2 reported that basic things worked quite well for her and the general education teacher. For example, a schedule and a strict routine were important for both settings. Teacher3 pointed out that her school had many activities that both children with ASD and general education students participated together, such as social play groups where all children play together.

According to Teacher4, children with ASD play together with general education students, so there are many opportunities for her to make decisions with the general education teacher. Teacher5 reported that general education teachers in her school were cooperative, often doing things together. For example, the general education teacher sometimes helped in the special education classroom. In addition, children with ASD played with children from the general education classes. Teacher6 also reported that her children played with children from the general education classes. She noted that she and the general education teachers agreed that children could learn from each other.

#### Theme #7

There were challenges of teaching children with ASD. The results are summarized in Table 7. An analysis of Table 7 indicates that special education teachers faced various challenges when teaching children with ASD. Teacher1 reported that children with ASD have different levels of disability. According to

Teacher2, some children wanted to play with toys while others wanted to use assistive devices. Teacher3 pointed out that disruptive behavior was a challenge that had to be overcome with sustained functional communication training. Teacher4 was also of the opinion that disruptive behavior was a challenge, especially since some children were more unruly than others. Teacher5 said that disruptive behavior was a problem, especially when the children were with general education students. Teacher6 noted that a new teacher faced the challenge of learning the different behaviors and abilities of children with ASD.

Table 7. Challenges of Teaching Children with Autism Spectrum Disorder

Participant	Challenges
Teacher1	Different levels of disability in children with ASD
Teacher2	Some children preferred playing with toys while others wanted assistive devices.
Teacher3	a) Disruptive behavior b) Sustained functional communication training necessary to overcome disruptive behavior
Teacher4	a) Disruptive behavior b) Some children more unruly than others
Teacher5	a) Disruptive behavior b) Disruptive behavior especially when children with ASD were playing with children from general education classes
Teacher6	A new teacher faced the challenge of learning the different behaviors and abilities of children with ASD

## CHAPTER FIVE

### DISCUSSION

In this chapter, the researcher will discuss the results of this study and the extent to which special education teachers are able to teach nonverbal communication skills to children with autism spectrum disorder. This chapter will also discuss the limitations of the study and recommendations for future studies.

There were six qualified special education teachers from special education schools in Southern California who participated in this study. Five of the participants were female, five of them had four years of experience teaching special education and one of them had ten years of experience, and all were in the age range 28-38 years. The purpose of the study was to examine how special education teachers are implementing evidence-based practices for non-verbal communication skills of children with ASD. There were two research questions:

1. What are the evidence-based practices to improve non-verbal communication skills of children with ASD?
2. What kinds of challenges do teachers face when teaching non-verbal communication skills to children with ASD?

Cadette (2015) posits the view that children with ASD have limited communication skills while Alshurman and Alsreaa (2015) point out that children with ASD who are taught nonverbal communication skills at an early age acquire

the ability to express their feelings and emotions in more than one way. In relation to these questions, therefore, a number of nonverbal communication skills stood out: Using toys and visual supports, peer tutoring, and using functional communication training.

### Joint Attention

Teacher6 used visual aids for nonverbal communication training. However, Teacher1, Teacher2 and Teacher4 used toys to overcome disruptive behaviors. These results are consistent with those of Klein et al. (2009) who used mechanical toys to teach children with ASD to follow the gaze of an adult, in the process matching the intent of the gaze with an object. Otero et al. (2015) describe the use of toys, for example, as an evidence-based strategy rooted in behavioral therapy. In this approach, skills are built and reinforced when children with ASD are prompted to pick preferred toys as a method of matching the particular toy with a specific established routine. The use of toys was also deployed in Corbett et al.'s (2016) study as a tool for group activity with peers.

While Teacher1 used basic sign gestures for nonverbal communication skills, Paparella et al. (2011) argued that children with ASD have deficits in joint attention, one example being the use of gestures for showing as method of sharing experiences. Requesting skills may start at the same time in children with ASD and in typically developing children, but the sequence with which joint attention skills begin in children with ASD is dissimilar to the normative model, an example being response skills of showing. In addition, the study by Chiang,

Soong, Lin and Rogers (2008) found that there were deficits of joint attention in children with ASD compared to children in a typically developing group.

### Peer Tutoring

There was evidence of peer tutoring as a nonverbal communication skill in the study. When Teacher6 was asked how she advocated for children with ASD when working with the general education teacher, she posited the view that both she and the general education teacher agreed that children with ASD and typically developing children could learn from each other. In answer to the same question, Teacher4 and Teacher5 reported that children with ASD and typically developing children in their schools played together.

### Functional Communication Training

Functional communication training (FCT) emerged as a major theme in the study. Teacher1, Teacher3, Teacher4, and Teacher5 used functional communication training to impart nonverbal communication skills in children with ASD. In addition, Teacher4, Teacher5, and Teacher6 used functional communication training to overcome disruptive behaviors. Teacher4 specifically mentioned using the picture exchange communication system (PECS) training as her preferred method. In fact, Teacher3 mentioned that sustained functional communication training was a major challenge that she faced when teaching children with ASD.

According to Otero et al. (2015), cognitive behavior therapy (CBI) focuses on both positive and negative processes of thought to change behavior. CBI is not only used to address aggressive behavior, but is also used to overcome social skills deficits in children with ASD. In children with ASD, social skills deficits are the most debilitating.

### Limitations

There were a number of limitations in this study. Firstly, the number of participants was only six. This was a small sample size. A large sample size would have made it possible to arrive at more generalized findings. In addition, a large sample size could have facilitated the quantitative approach to compare findings from this approach with the more in-depth qualitative approach as a method for better generalizability. Finally, the participants were from special schools in Southern California. As such, the findings cannot be generalized to the larger American population of special education teachers.

### Recommendations for Future Study

There are a number of issues that can be considered for future research. Firstly, the special education teachers used different approaches to overcome disruptive behaviors. While Teacher1, Teacher2, and Teacher4 used visual supports and toys, Teacher5 and Teacher6 used functional communication training. This is an area that requires further research to determine the efficacy of both approaches. Another area that requires attention in future research is the

efficacy of a co-teaching model that incorporates children with ASD with typically developing children.

While there was evidence of children with ASD playing regularly with typically developing children, the co-teaching approach was only evident in Teacher3's school. An examination of the co-teaching model would therefore benefit from further research. In addition, some of the special education teachers cooperated with general education teachers. As such, future research can be helpful in determining the actual role of a general education teacher in the special education classroom and the role of a special education teacher in the general education classroom.

## CONCLUSION

The purpose of this study was to examine how special education teachers are implementing evidence-based practices for non-verbal communication skills of children with ASD. This issue was addressed based on two research questions: What are the evidence-based practices to improve non-verbal communication skills of children with ASD? And what kinds of challenges do teachers face when teaching non-verbal communication skills to children with ASD? This study found evidence that joint attention deficits were overcome using visual aids, toys, and basic sign gestures. In addition, peer tutoring, functional communication training, and drawing were found to improve nonverbal communication skills.

While these study findings are consistent with those found in other studies discussed in the literature review, it is important that future studies use a larger sample of participants to arrive at more generalized findings. In addition, better training can be provided to teachers in special education classes and those in general education classes to use a co-teaching model that will benefit children with ASD and also reduce the stigma typically developing children may have of their peers in special education classes.



APPENDIX A  
INTREVIEW QUESTIONS

The list of the interview questions that developed by the researcher  
Shamma AIOkla

1. Are you certified as a special education teacher?
2. What strategies do you use to overcome disruptive behaviors among children with ASD?
3. What non-verbal communication skills do you teach children with ASD?
4. Do you have rules and procedures in place to keep order in your classroom?
5. How do you advocate for children with ASD when working with general education teachers?
6. What non-verbal behavior methods do you employ for your students?
7. What strategies do you use to motivate children with ASD?
8. What major challenges have you faced as a special education teacher?  
When?

APPENDIX B  
INSTITUTIONAL REVIEW BOARD APPROVAL



Shamma Alokla &lt;005219262@coyote.csusb.edu&gt;

## IRB-FY2018-26 - Initial: IRB Expedited Review Approval Letter

1 message

mgillesp@csusb.edu <mgillesp@csusb.edu>  
 To: 005219262@coyote.csusb.edu, jemma.kim@csusb.edu

Wed, Jan 10, 2018 at 4:56 PM



January 20, 2018

### CSUSB INSTITUTIONAL REVIEW BOARD

Expedited Review

IRB#FY2018-26

Status: Approved

Ms. Shamma Alokla and Prof. Jemma Kim  
 Department of Special Education, Rehabilitation & Counseling  
 California State University, San Bernardino  
 5500 University Parkway  
[San Bernardino, California 92407](#)

Dear Ms. Alokla and Prof. Kim:

Your application to use human subjects, titled "Evidence-Based Practices for Non-Verbal Communication Skills of Children with Autism Spectrum Disorder" has been reviewed and approved by the Institutional Review Board (IRB). The informed consent document you submitted is the official version for your study and cannot be changed without prior IRB approval. A change in your informed consent (no matter how minor the change) requires resubmission of your protocol as amended using the IRB Cayuse system protocol change form. **Your application is approved for one year from January 20, 2018 through January 20, 2019. Please note the Cayuse IRB system will notify you when your protocol is up for renewal and ensure you file it before your protocol study end date.**

Your responsibilities as the researcher/investigator reporting to the IRB Committee include the following 4 requirements as mandated by the Code of Federal Regulations 45 CFR 46 listed below. Please note that the protocol change form and renewal form are located on the IRB website under the forms menu. Failure to notify the IRB of the above may result in disciplinary action. You are required to keep copies of the informed consent forms and data for at least three years. Please notify the IRB Research Compliance Officer for any of the following:

- 1) **Submit a protocol change form if any changes (no matter how minor) are proposed in your research protocol for review and approval of the IRB before implemented in your research,**
- 2) **If any unanticipated/adverse events are experienced by subjects during your research,**
- 3) **To apply for renewal and continuing review of your protocol one month prior to the protocols end date,**
- 4) **When your project has ended by emailing the IRB Research Compliance Officer.**

The CSUSB IRB has not evaluated your proposal for scientific merit, except to weigh the risk to the human

participants and the aspects of the proposal related to potential risk and benefit. This approval notice does not replace any departmental or additional approvals which may be required. If you have any questions regarding the IRB decision, please contact Michael Gillespie, the IRB Compliance Officer. Mr. Michael Gillespie can be reached by phone at (909) 537-7588, by fax at (909) 537-7028, or by email at [mgillesp@csusb.edu](mailto:mgillesp@csusb.edu). Please include your application approval identification number (listed at the top) in all correspondence.

Best of luck with your research.

Sincerely,

*Caroline Vickers*

Caroline Vickers, Ph.D., IRB Chair  
CSUSB Institutional Review Board

CV/MG

APPENDIX C  
RESEARCH FLYER

## **PARTICIPANTS ARE NEEDED FOR RESEARCH**

**I am looking for volunteers to take part in a study of  
how special education teachers are implementing evidence-  
based practices for non-verbal communication skills of  
children with ASD**

**You will be asked to: *fill-out an e-mail questionnaire and  
participate in an interview***

Your participation will involve 2 sessions,  
each session will last approximately 45 minutes long

For more information about this study, or to become a volunteer,  
please contact:

Shamma AIOkla  
(949)396-9858 or  
Email: [shammaa90@hotmail.com](mailto:shammaa90@hotmail.com)

**This study has been examined and received ethics approval  
by the Institutional Review Board, California State University, San  
Bernardino.**

Call Shamma AIOkla	Call Shamma AIOkla	Call Shamma AIOkla	Call Shamma AIOkla	Call Shamma AIOkla	Call Shamma AIOkla
(949)396-9858	(949)396-9858	(949)396-9858	(949)396-9858	(949)396-9858	(949)396-9858
Or Email:	Or Email:	Or Email:	Or Email:	Or Email:	Or Email:
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APPENDIX D  
TEACHER INFORMED CONSENT



### Teacher Informed Consent

The study in which you are being asked to participate is designed to investigate how special education teachers are implementing evidence-based practices for non-verbal communication skills of children with ASD. The study is being conducted by Shamma AIOkla under the supervision of Professor Jemma Kim, Professor of Special Education. This study has been approved by the Institutional Review Board, California State University, San Bernardino.

**Purpose:** This study will examine how special education teachers are implementing evidence-based practices for non-verbal communication skills of children with ASD, bearing in mind that many of these children may have different manifestations of the disability and that schools have different resources to cope with children of special needs. This study will be submitted for my Master's thesis.

**Risks and Benefits:** As a benefit to you, this study will contribute, in a practical way, with information on teaching methods that can be implemented in any school setting. In addition, your participation will provide a voice for children with ASD, in addition to gaining a sense of empowerment, awareness, and purpose, as a special education teacher. However, there is minimal risk that you may become uncomfortable being interviewed about your professional practice while being audio recorded. To overcome this challenge, I will ensure not to cloud any issues under discussion with my personal experience so that your perspective can be at the forefront. If any indication of discomfort becomes evident, I will pursue another line of questioning.

**Procedure:** It is anticipated that you will complete an e-mail survey and then avail yourself to two face-to-face interviews of 45 minutes duration each that will be audio recorded with a digital audio recorder at a time and place of your convenience during a period of two weeks. You can decide to not answer any of the questions in the interview even after signing the consent form.

**Confidentiality:** Your confidentiality will be maintained through the coding of interview data, and any personally identifiable information, including your names or addresses will not be required. The interviews will be captured in field notes and audio recorded with a digital audio recorder. Moreover, the digital audio recorder will be password protected. The audio data will later be transferred to a computer and transcribed only by the researcher.

**Participation:** Your participation in this study is voluntary and you may withdraw at any point during the course of the study without any penalty. There is minimal risk that you may become uncomfortable being interviewed about your professional practice while being audio recorded. However, this researcher will ensure that you share the benefits of the results of this research, particularly any new knowledge that may be gathered about evidence-based practices for non-verbal communication skills of children with ASD. Thanks, and I look forward to your participation in this study.



College of Education  
Department of Special Education, Rehabilitation and Counseling

**Identification of Researcher:**

If you have any concerns or questions related to the research, you may contact me at: a) cell: (949)396-9858 and b) shammaa90@hotmail.com for any questions or additional information

Your signature below indicates that: (Tick box where appropriate)

1	The procedures for audio recording have been explained to you and therefore give consent for such recordings during interviews	
2	You understand that your participation is voluntary and you may withdraw at any time	
3	You understand the procedures for confidentiality in this study (e.g. use of pseudonyms)	
4	You have read and understood the purpose of the study and all information provided and willingly volunteer to be a research participant	

**Information in Relation to Study Results:**

Please make a "tick" against any information you would like to be provided with. **Please note that you have the responsibility to let the researcher know if your telephone number or address changes.** The contact information of the researcher is available under "Identification of Researcher" in this form.

☐ I require no Information

☐ General information on results of the study

☐ I need specific information evidence-based practices for non-verbal communication skills of children with ASD

Subject Signature \_\_\_\_\_ Date \_\_\_\_\_

Researcher Name \_\_\_\_\_ Date \_\_\_\_\_

Researcher Signature \_\_\_\_\_

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